

Standard Operating Procedure

Lower Passaic River Restoration Project

Investigative Derived Waste (IDW) Handling and Disposal

Procedure Number: LPR-G-04

Revision No.: 5

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Prepared by

Debra L. Simmons

Kristen Durocher

Laura Kelmar

Laura Kelmar, Project Manager

Date: July 7, 2011

Debra L. Simmons, Project QA Manager

Date: July 7, 2011

Annual review of this SOP has been performed
and the SOP still reflects current practice.

Initials: _____ Date: _____
Initials: _____ Date: _____

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Attachment 1 – Example of IDW Log

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1.0 Scope and Applicability

- 1.1** The purpose of this document is to define the standard operating procedure (SOP) for disposal of sediment, water, personal protective equipment (PPE), and other potentially contaminated materials generated during operations conducted in the Lower Passaic River Study Area and the Newark Bay Study Area as part of the Lower Passaic River Restoration Project (LPRRP).
- 1.2** It is fully expected that the procedures outlined in this SOP will be followed. Procedural modifications to this SOP may be warranted depending upon field conditions, equipment limitations, or limitations imposed by the procedure. Substantive modifications to this SOP will be approved in advance by the Project Quality Assurance (QA) Manager and the Task Manager and communicated to the Cooperating Parties Group (CPG) Project Coordinator and the United States Environmental Protection Agency (USEPA) Remedial Project Manager. Deviations from this SOP will be documented in the field records. The ultimate procedure employed will be documented in the report summarizing the results of the sampling event or field activity.

2.0 Health and Safety Considerations

- 2.1** The health and safety considerations for the work associated with this SOP, including physical, chemical, and biological hazards, are addressed in the site specific Health and Safety Plan (HASP) and associated addendums (MPI 2005a; MPI 2005b; AECOM 2011).
- 2.2** Daily safety briefs will be conducted at the start of each working day before any work commences. These daily briefs will be facilitated by the Site Safety Officer (SSO) or his/her designee to discuss the day's events and any potential health risk areas covering every aspect of the work to be completed. Equipment decontamination and Investigative Derived Waste (IDW) handling are often part of these discussions. As detailed in the HASP, everyone on the field team has the authority to stop work if an unsafe condition is perceived until the conditions are fully remedied to the satisfaction of the SSO.

3.0 Interferences

Not applicable.

4.0 Equipment and Materials

The following equipment list contains materials which may be needed in carrying out the procedures contained in this SOP. Not all equipment listed below may be necessary for a specific activity. Additional equipment may be required, pending field conditions.

- personal protective equipment (PPE) or other safety equipment, as required by the HASP;

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- 55-gallon open-top drums (Department of Transportation [DOT] approved) with lid;
- 55-gallon closed-top drums (DOT approved) for collection of liquids;
- 30-gallon (minimum) garbage bags;
- 5-10 gallon carboys to be used as satellite waste collection containers;
- Type I or II UL approved galvanized steel can(s) to be used for solvent waste collection;
- 5-gallon buckets with lids;
- permanent marking pens and/or paint pens;
- labels and tags;
- duct tape;
- storage racks;
- small (cooler-size) storage containers;
- walk-in cooler;
 - chemical storage cabinet (meeting Occupational Safety and Health Administration [OSHA] and National Fire Protection Association [NFPA] Code 30 specifications/Factory Manual [FM] approved);
- field logbook and IDW log form (see Attachment 1); and
- Acid and solvent spill kits.

5.0 Procedures

Potentially contaminated sediment, water, PPE, and other materials will be classified into three categories: (1) solid materials consisting of sediments, sediment samples returned from the laboratory, used polybutyrate core tubes, used PPE, and other materials used in the handling, processing, and storage of sediment (addressed in Section 5.1); (2) liquid wastes such as waste water, river water and decontamination water (addressed in Section 5.2.1); and (3) spent and residual chemicals (liquids) from decontamination (addressed in Section 5.2.2). Sediment from cores that are not processed for chemical, biological, or radiochemical analysis may be either archived or disposed of, and will be segregated and handled separately according to its classification. To the extent practical, liquids generated during coring and core processing operations will be separated from the solid material. Each type of material will be handled in the manner described in this SOP.

As discussed in the HASP, solid and liquid IDW handling will be performed in a well ventilated area (in the field) or in the vacuum hood when working in the field facility. Furthermore, skin and eyes will be protected from accidental exposure. Liquid IDW transfers will also take place in a well-ventilated storage location and may require respirators as specified in the HASP.

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5.1 Solid waste

Solid residuals generated during field activities will be characterized for appropriate offsite disposal. Solid residuals consist of two types of materials: non-sediment solid materials generated during the collection and processing of cores, including items such as used polybutyrate core tubes, aluminum foil from clean core tubes, PPE (e.g., gloves, Tyvek® suits, boot covers), and sediment not used for analyses (e.g., waste sediment such as that collected from the core "smear zone" and residual sediment). Non-sediment and sediment wastes will be segregated and temporarily stored in separate containers pending disposal. Loose sediment will be removed from non-sediment waste items prior to disposal and stored with other sediment wastes.

If recovered sediment is determined to be unusable after a core has been cut open, the sediment will be removed from the core tube and stored in an appropriate container for disposal as waste sediment. The used core tube will be stored and disposed of with the non-sediment solid wastes. Sediment residuals will be placed in 55-gallon drums, labeled, and stored temporarily until disposal.

Non-sediment solid materials will be placed in 55-gallon drums, bulk bags and/or a roll-off container, and stored temporarily pending characterization and off site disposal. All drums and bags containing solids residuals will be labeled and handled as described in Section 5.1.1 of this SOP.

5.1.1 Handling and tracking

As they are generated during field activities, waste sediment and other solid waste materials will be placed in DOT-approved 55-gallon drums or 30-gallon bags. Solid waste materials which are initially placed in bags may be bulked into 55-gallon drums for storage. The following procedures will be followed for storing sediment and other solid waste in these drums:

- A unique drum number (consisting of the program ID and the sequential number) will be assigned to each drum by the Field Task Manager or designee. The drum number will be clearly marked on multiple places on the drum;
- A label indicating that the drum contains IDW pending characterization and a Class 9 Hazardous Solid Waste label will be placed on each drum;
- A log will be kept for each drum, listing the materials placed in that drum. All solid materials will be segregated based on the type of material (e.g., sediment, coring tubes, PPE, waste plastic, paper, or foil) and, to the extent practicable, by where they were generated (e.g., location within the river, station number, etc.);
- Drums will be kept closed at all times except when material is being added to them. Drums will be sealed (bungs or lid bands tightened) when not in active use.
- Collection drums may be reused at the processing facility after emptying; and
- Drums containing solid materials will be stored in a secured area within the field facility until proper offsite disposal can be coordinated. Drums containing hazardous waste will be removed from the facility within the time mandated for the governing hazardous waste generator status (large quantity generator, small quantity generator, or conditionally except generator).

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5.2 Liquid waste

5.2.1 Waste water

Waste water will be generated during sediment core processing and decontamination activities. Sediment recovered during this process will be handled according to Section 5.1 of this SOP. Waste water will be collected in the large on-site storage tank (which is connected to the sink outlet) until the material is characterized and transferred off site for disposal.

5.2.2 River water

River water will be generated during the collection of surface water samples including purging the pump tubing and excess water retained in the trigger-activated grab sampler. River water is not considered IDW. During sampling activities, river water that is collected during the sampling but is not needed to fill the required sample containers will be temporarily containerized in 5-gallon plastic buckets, and will be returned to the river upon completion of sampling at a station.

5.2.3 Chemical liquid wastes

Chemical liquid wastes will include the spent solvents and acids and other residual chemicals generated during the decontamination process (refer to SOP LPR-G-03 – Equipment Decontamination).

Waste acids and solvents will be collected in (dedicated) satellite containers as follows:

- Waste acids (e.g., HCl, HNO₃) will be collected in a plastic storage carboy (20-L) **SEPARATE FROM WASTE SOLVENTS**, labeled with a Class 8 Corrosive Liquid label and containing a tag that indicates acid name, concentration, and volume along with users initials, date/time.
- Waste solvents (e.g., acetone, methanol and hexane) will be collected in Type I or II UL approved galvanized steel disposal can, **SEPARATE FROM WASTE ACIDS**, labeled with a Class 3 Flammable Liquid label and containing a tag that indicates solvent name, concentration, and volume along with users' initials, date/time.

If chemical liquid waste volumes increase beyond limited satellite storage container capacity, they will be placed in separate DOT-approved 55-gallon drums as follows:

Acid Waste (HCl, HNO₃):

- Assign a unique identification number to the (plastic lined) acid drum (clearly marked on the top and sides).
- Place a label indicating that the drum contains IDW pending characterization and a Class 8 Corrosive Liquid label on the drum
- Prepare a log for the drum, listing the volume and concentration of each acid transferred to the drum along with date/time.
- Close the drum after each transfer
- Store the drum in a secure area at the field facility until pickup by an authorized waste handler at the end of the field phase. Drums containing hazardous waste will be

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removed from the facility within the time mandated for the applicable hazardous waste generator status (large quantity generator, small quantity generator, or conditionally except generator).

Solvent Waste (Acetone, Methanol, Hexane):

- Assign a unique identification number to the Type I or II UL approved steel disposal can (clearly marked on the top and sides);
- Prepare a log for the drum, listing the volume and concentration of each solvent transferred to the drum along with date/time.
- Place a label indicating that the drum contains IDW pending characterization and a Class 3 Flammable Liquid label on the drum.
- Close the drum after each transfer.
- Store the drum in a secure area at the field facility until pickup by an authorized waste handler at the end of the field phase. Drums containing hazardous waste will be removed from the facility within the time mandated for the governing hazardous waste generator status (large quantity generator, small quantity generator, or conditionally except generator).

5.3 Samples returned from offsite laboratories

Upon completion of the required chemical, biological, and/or radiochemical analyses, remaining sample material and sample containers from the laboratory may be returned to the field facility. Returned sample material/containers will be transported under chain of custody procedures, and remain in custody until disposal. Upon receipt, the chain of custody form will be signed and the samples will be logged in by a project staff member. The approximate volume of sample material and the condition of the containers in which the samples are returned will be checked and recorded in the IDW logbook.

The labels will then be removed from the sample containers, and the containers with their contents will be placed in a DOT-approved 55-gallon drum and will be characterized and disposed of off-site.

5.4 Materials returned from sampling locations

Both solid and liquid IDW will be generated at each sediment sampling location. These materials will be containerized in closed 5-gallon buckets on the sampling vessel, labeled, and secured for transport to the CPG field facility dock. The containers will be carried by hand to a truck with a plastic-lined cargo area and then transported to the field facility for consolidation in 55-gallon drums for subsequent testing and disposal.

IDW associated with surface water sampling may include liquid wastes (equipment decontamination solutions) and solid waste such as used PPE, aluminum foil, and tubing. These materials will be containerized as described above and returned to the CPG field facility for disposal. As discussed in Section 5.2, river water is not considered IDW and will be returned to the river upon departure from a sampling location.

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6.0 Quality Assurance/Quality Control

- 6.1** Disposal procedures will be documented in a logbook to ensure that disposal activities are conducted in accordance with the procedures outlined in the SOPs. Waste manifests will be obtained for solid and aqueous waste disposal to verify that proper transportation and disposal of these materials has occurred.
- 6.2** It is the responsibility of the Field Task Manager to periodically check/ensure that the IDW procedures are in conformance with those stated in this SOP and that records are complete and accurate.

7.0 Data and Records Management

- 7.1** The Field Task Manager or designee is responsible for documenting the handling and/or disposal of containers filled with solids or liquids generated during the LPRRP investigation in accordance with SOP LPR-G-01 (Field Records). In addition, the following information will be included in the logbook (at a minimum):
- Name of person performing residual management or disposal activities;
 - Date and time of activity;
 - Information coordinating container numbers for drums or bags containing solid materials with sample numbers, core boring numbers, or origin; and
 - Information coordinating origin of waste liquid (water or chemical[s]) with specific waste drum or tank.
- 7.2** The IDW logbook will be kept at the CPG field facility for the duration of the field program. The logbook will be divided into 3 sections. Section 1 will provide a summary of each drum number, the date that filling commenced, date filled, pickup date, and manifest identifier. Individual drum/container logs (Attachment 2) will be inserted into Section 2 of the logbook when complete (when each container is filled and closed for shipping). All shipping manifest documentation and Land Disposal Restriction forms (if applicable) will be inserted into Section 3 of the logbook when available.
- 7.3** Deviations to the procedures detailed in the SOP will be recorded in the field logbook at the time of the occurrence and summarized on the Daily Activity Log (refer to SOP LRP-G-01 – Field Records). A formal nonconformance report (NCR) will be completed (refer to SOP LRP-G-01 – Field Records) and distributed as specified in the QAPP.
- 7.4** All records associated with the activities described in this SOP will be ultimately maintained in accordance with the Lower Passaic River Restoration Project Quality Management Plan (AECOM 2009).

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8.0 Personnel Qualifications and Training

- 8.1** The individual executing these procedures will have read, and be familiar with, the requirements of this SOP. Execution of these activities will initially be supervised by more experienced personnel.
- 8.2** Personnel will also be health and safety trained and certified as specified by the HASP.

9.0 References

AECOM 2009. Quality Management Plan, Lower Passaic River Restoration Project, CERCLA Docket No. 02-2007-2009. September 2009 or current version.

AECOM 2011. Lower Passaic River Restoration Project, Remedial Investigation, Health and Safety Plan Addendum. June 2011 or current version.

MPI 2005a. Lower Passaic River Restoration Project Health and Safety Plan. January 2005.

MPI 2005b. Lower Passaic River Restoration Project Health and Safety Plan Final Addendum – Sediment Coring. July 2005.

Tierra 2007. Standard Operating Procedure No. 7 (Revision 2), Management and Disposal of Residuals. Newark Bay Study Area Phase II RIWP, Appendix F, October, 2007.

10.0 Revision History

| Revision | Date | Changes |
|-----------------|----------------|--|
| 0 | April 2008 | NA |
| 1 | July 2008 | Remove "acid" from solvent waste procedures in Section 5.2.2; add destruction of labels to Section 5.3 |
| 2 | June 2010 | Added information specific to surface water sampling; logo change. |
| 3 | September 2010 | Minor revisions throughout the document. |
| 4 | June 2011 | Minor revisions throughout the document. |
| 5 | July 2011 | Included Newark Bay Study Area |



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Task:

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